Results from 2nd Light MOSFIRE observing run, May 4-9 2012
CCS, last updated 22 May 2012

Photometric Zero Points:

Gain =2.15 e/ADU
All zero points are for 1e-/s/pixel
values not corrected for atmosphere
(assume airmass=1.0)

	Vega	AB
Y	~ 28.13	28.80
J "	27.89	28.79
H "	27.54	28.94
Ks	26.93	28.78

Sky Brightness (all with full moon) in mag/arcsec^2

	Vega	AB
Y	17.37-17.50	18.02-18.15
J	15.49-15.87	16.39-16.77
H	13.59-13.89	14.99-15.29
Ks	13.68	15.54

Spec Sky Background (full moon, between OH lines)
All values are mag/arcsec^2

	Vega	AB	e-/sec/pix
Y	18.73	19.38	0.34
J	18.34	19.24	0.30
H	17.32	18.72	0.57
K	16.35	18.21	0.39 (lambda < 2.2 microns)
	14.05	15.91	8.0 (2.35-2.41 microns)

Background Count Ratea, imaging modes:
Exposure times are recommended maximum values

	(e-/sec/pix)	img exp time
Ks	6450-8600	4.3 sec
H	8940-11980	4.3 sec
J	2040-2900	9.4 sec
Y	730-820	18.9 sec
J2	1010	30 sec
J3	800	30 sec
H1	5680	8 sec
H2	5960	8 sec

Suggested individual exposure times for spectra
e-/sec/pix (min, max) and median

K	180s	(0.39, 175) med=3.75
H	30-60s	(0.57, 283) med=1.92
J	60-120s	(0.30, 62) med=0.60
Y	30-60s	(0.34, 26) med=0.42

The above are for optimal subtraction of OH lines;
Time to be background limited depends on readout

mode; for MCDS8, read noise is ~7.7e-/pix, so b.g. limited
when background contribution counts are ~100e-/pix. The required
integration times assuming the *minimum sky count rate* are:

Y 330s (peak   ~8600 e-/pixel on brightest OH line)
J 170s (peak ~10,500 e-/pixel on brightest OH line)
H 175s (peak ~50,000 e-/pixel on brightest OH line)
K 260s (peak ~45,500 e-/pixel on brightest OH line)

Clearly, modes with a larger number of Fowler pairs can
reduce read noise to ~3e- and therefore the minimum
integration time could be reduced by ~4 times in principal.
However, overhead penalty is ~1.455 seconds per read pair--
e.g. MCDS32 would require about 35 seconds more clock time
than MCDS8-- this means that background limited short
integrations would add significant overhead (and the lag
defeats the purpose of short integrations, which is to
temporally sample the sky as often as possible)